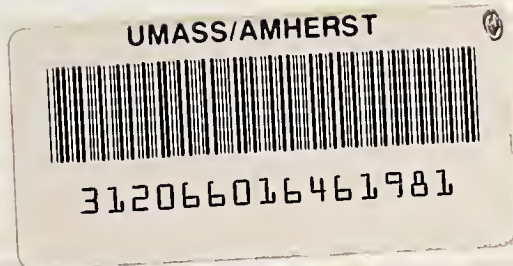


MASS. EA10.2: G86/3



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Draft Environmental Impact Report

EOEA #11083

Executive Summary



Prepared for:
The Commonwealth of Massachusetts
Department of Environmental Management

Prepared by:
Epsilon Associates, Inc.

July 1998



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



DIVISION OF RESOURCE CONSERVATION
100 CAMBRIDGE ST., BOSTON, MA 02202 PHONE 617-727-3160
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Argeo Paul Cellucci
GOVERNOR

July 15, 1998

Trudy Cox
SECRETARY

Dear Interested Parties:

Peter C. Webber
COMMISSIONER

The Massachusetts Department of Environmental Management (DEM) is pleased to issue this Executive Summary of the Draft Environmental Impact Report (DEIR) for Greylock Center. Greylock Center is an exciting and creative project weaving together environmental education, year-round recreation and sustainable development.

The DEIR builds upon the Secretary's Certificate on the Greylock Center Environmental Notification Form, in which the Secretary acknowledges that the design of Greylock Center is ongoing, and suggests that the MEPA process be undertaken as a means to present continuing refinements to various aspects of the program. Your participation will continue to be sought as the MEPA process proceeds, to ensure that the Greylock Center development is an asset to future generations of our Commonwealth.

Public Input and Alternatives

DEM encourages public response, as public input has critically influenced the shape of the project as it currently stands. The current design has been developed pursuant to Chapter 676 of the Acts of 1985, and in accordance with the guidelines established by the Greylock Center Master Plan. DEM's planning process has encouraged public participation, as well as the guidance of local and national experts.

In this DEIR we include analysis based on the project as proposed by DEM and for which areas of analysis were identified in the Secretary's Certificate. We also include an alternative that is based on DEM's ongoing work to make this project as environmentally innovative as possible. In this DEIR, we have included a modified site plan, developed at a working session sponsored by the Center of Ecological Technology. This modified site plan, the result of days of discussion about sustainable development, proposes consolidating the Hotel/Conference Center into the Village and other changes.

DEM actively encourages reviewers to comment on the strengths of the original proposal and the alternative proposed at our recent sustainability conference.


Early Action

As part of this DEIR, Greylock Management Associates (GMA), through DEM, is requesting authorization to commence construction of the proposed Environmental Center upon approval of the DEIR. The Environmental Center involves negligible impacts, and presents an excellent opportunity to serve as a model for future development and programming for other Greylock Center components. The Environmental Center will be designed to accommodate educational programs associated with Nature's Classroom, an organization that operates successful environmental education facilities for 25,000 school-aged children throughout New England and New York, as well as providing facilities which will be utilized by other environmental and educational organizations.

The Environmental Center is separable from the overall Greylock Center development, in that it could be served by private water and sewer if necessary. However, potable water supply and sewage disposal for the facility has been included in the consumption/ generation rates for the full-build of Greylock Center to provide conservative estimates for full disclosure of impacts.

GMA is currently researching alternative sewage disposal systems for the facility, as this technology is intended to be utilized for other discrete Greylock Center program elements (e.g., the golf clubhouse). DEM and GMA believe that construction of the Environmental Center will be a tremendous asset to the site, and has the potential to guide future development and programming throughout the Greylock Center site.

Sincerely,



Peter C. Webber
Commissioner

PROJECT DESCRIPTION

Overview

Greylock Center is a public-private project proposed by the Massachusetts Department of Environmental Management (DEM), owner of the site since 1989, and Greylock Management Associates (GMA), the designated private development team. The site, also known as Greylock Glen, consists of approximately 1,063 acres of land in the Town of Adams, Massachusetts located at the base of Mount Greylock's eastern slope.

This Executive Summary condenses a Draft Environmental Impact Report (DEIR) that was submitted to the Secretary of Environmental Affairs, MEPA Unit on July 15, 1998. The full DEIR is available for review at the Adams Free Library. Comments on the DEIR should be made in writing to the Secretary of Environmental Affairs, MEPA Unit, 100 Cambridge Street, Boston, MA 02202, and must be submitted by August 21, 1998.

Greylock Center is an exciting and creative project weaving together environmental education, year-round recreation and sustainable development. At full build-out the center will include: a 172-room resort hotel and conference center, an 18-hole golf course and appurtenant buildings, up to 300 residential units clustered in a village complex and in rustic mountain cottages, an environmental education center, a 28-room bed & breakfast, and numerous recreational amenities including campground sites and trails for hiking, cross-country skiing and horseback riding. The general layout of these project components is illustrated in Figure 1.

The project is continually evolving. The project has been periodically modified not only in response to additional data generation associated with the DEIR analysis, but also as a result of a public workshop held in December of 1997, and the concurrent work of the sustainability strategy team assembled by the Center for Ecological Technology (CET). The intention of the current document is to establish a series of performance standards for the construction build-out and programming of Greylock Center, and to allow further refinements to occur in conjunction with detailed design development and in response to advancing environmental technologies.

The Commonwealth of Massachusetts, under the legislative authority of Chapter 676 of the Acts of 1985, intends to enter into a Master Lease with the project's designated developer, Greylock Management Associates (GMA) for the development and operation of the entire 1,063 acre parcel with an option to purchase the component development areas. The Master Lease will require development in all areas to comply with the Greylock Center Master Plan, Secretary's Certificate, and the conditions of any required permits for the construction and operation of Greylock Center.

The Greylock Center project will be constructed in two phases, with target completion dates of 2000 for Phase I and 2003 for the majority of Phase II. The actual build-out of Phase II may extend substantially beyond the year 2003, as development of residential units will be driven by market demand and fulfillment of Master Plan requirements. The phasing of the Greylock Center build-out is indicated in Table 1.

Modified Site Plan

A modified version of the current Greylock Center site plan was introduced for consideration as a result of a two-day working session held by the Center for Ecological Technology (CET), which is refining a sustainability strategy for the Greylock Center project as a whole. The modified plan is largely consistent with the site plan presented in the DEIR, however the hotel/conference center and mountain cottages would be relocated and consolidated in the vicinity of the village. As a further refinement of this modified plan, which evolved after the CET working session, the golf clubhouse would be moved to a central location within the Greylock Center property. The development components and their density remain the same under both the current site plan and modified version.

The modified plan may have certain merits from a sustainable development perspective. However, the potential changes have not been presented before the Greylock Center Advisory Committee or the Site and Building Design Committee, and therefore have not as yet been reviewed by these panels of citizens appointed by DEM to represent various public and private sector interest groups.

GOALS OF THE PROJECT

The goals of the Greylock Center project relate to both ecological and economic sustainability. DEM was granted stewardship over the property in accordance with the mandates of Chapter 676 of the Acts of 1985, which sought to develop the parcel in a manner which would act as an economic catalyst for Adams and the northern Berkshire county region. Subsequent to that legislation, DEM undertook a Master Planning process, which led to the introduction of environmental and educational goals in addition to the economic and recreational objectives of Chapter 676 for any development program to be pursued. By incorporating these environmental and educational goals within the Greylock Center Master Plan, adopted by the Greylock Center Advisory Committee (CAC) on August 29, 1994, DEM's land stewardship vision was codified, as articulated in the following mission statement presented in the Master Plan:

Greylock Center will be a recreational and educational facility created by joint public and private undertaking, providing economic benefits to the Berkshires in a manner that stresses environmental awareness and sensitivity of design, development, and operation. Greylock Center is intended to exemplify a sustainable approach to development, protecting the natural environment both of the site and the neighboring Mount Greylock State Reservation and demonstrating that sustainable approaches to development are good (profitable) for business as well as being good business.

Table 1

Proposed Greylock Center Construction Phasing

Program Component	Phase I (Year 2000)	Phase II (Year 2003)	Totals
Hotel & Conference Center	46 Rooms	126 Rooms	172 Rooms
Golf Course & Clubhouse	18 Holes	-	18 Holes
Recreational Amenities	❖	❖	Various
Wetland Restoration/Enhancement	❖	❖	Ongoing invasive species management
Environmental Center	30,000 square feet	-	30,000 square feet
Residential Units ¹			Max. 300 Units ²
Village Complex	Zero to 50 units ¹	Additional 250 units, mix of village residential units & mountain cottages	Balance of residential units
Mountain Cottages	Zero to 50 units ¹		Max. 50 mountain cottages
Greylock Bed & Breakfast	-	28 Rooms	28 Rooms
Commercial/Public Space (Village)	5,000 square feet	20,000 square feet	25,000 square feet
Gould Road Link	Initiate design	Road construction to precede Phase II	
Water & Sewer Infrastructure	Construction of mains beneath West Mountain Road	Water & sewer construction to accommodate ongoing build- out	

Notes:

❖ - Denotes completion during indicated phase

1 - Maximum of 50 units total to be developed during Phase I, split between of village units and mountain cottages

2 - Total build-out of 300 residential units in accordance with Master Plan, of which a maximum of 50 units will be mountain cottages. Completion to be driven by market demand and is anticipated well beyond the year 2003.

Greylock Center

Adams, Massachusetts

Masterplan

Scale: 1 : 8000

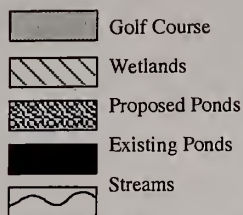
Date: June 24, 1998

Greylock Management Associates, Inc.
Massachusetts Department of Environmental Management

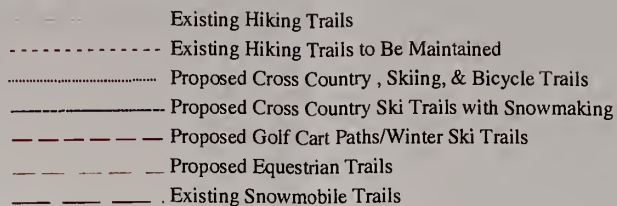
Dodson Associates
Terrasphere
BSC Group
Epsilon Associates

Survey by East Coast Mapping, 9/97
Wetlands Inventory by Earth Tech, 6/97

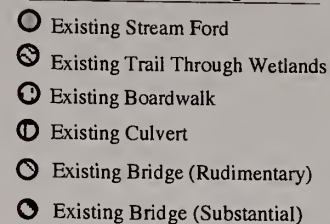
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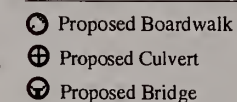
Trails



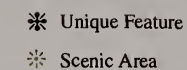
Existing Stream Crossings



Proposed Stream Crossings



Special Features



Rare and Endangered Species, Areas of Critical Concern Not Shown on Plan in Accordance with NHESP Policy





Bellows Pipe Trail

To Ragged Mountain

Mount Greylock State Reservation

To Raven Rocks

To Ragged Mountain

Thunderbolt Ski Trail

Thunderbolt Trail Parking

Wilderness Camping Area

Proposed Gravel Parking

Proposed Gravel Road

Thiel Camp
8 Rustic Cabins

Gravel Access Road

Hoxie Brook

To Notch Road

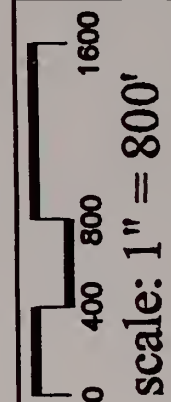
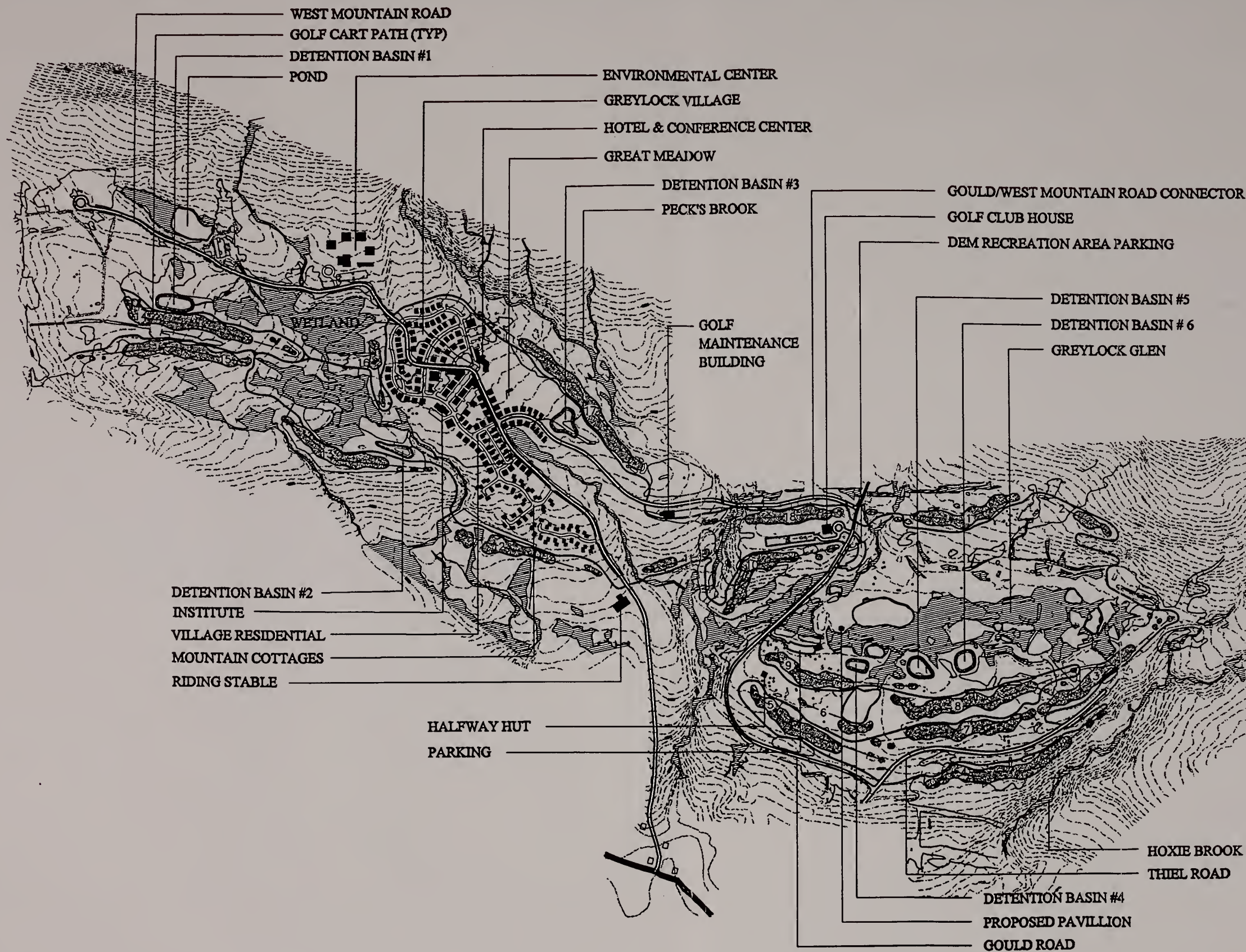
To Notch Road

To Notch Road

To Notch Road

Thiel Road

The Glen



GREYLOCK CENTER MODIFIED SITE PLAN

PROJECT COMPONENTS

The Greylock Center development consists of an assemblage of complementary facilities. A brief description of the major project components follows. An overall site plan is shown on Figure 1 and the modified site plan is shown on Figure 2.

Hotel and Conference Center

As originally proposed, the 172-room hotel and conference center complex is located at the southernmost end of West Mountain Road within the southern limits of the Greylock Center property, and is clustered with the golf clubhouse, driving range and ancillary hospitality facilities. The hotel and conference center structure will consist of approximately 132,000 sf of development, housed in a three-story building. An alternative discussed by participants in a working session organized by the Center for Ecological Technology (CET) would locate the hotel within the village complex and would move the golf clubhouse to a central location in order to create returning nines, as indicated in Figure 2.

Golf Course

The Greylock Center Master Plan includes an eighteen-hole golf course supported by a full-service clubhouse and halfway hut. All of the golf-related facilities will be constructed during the first phase of the overall Greylock Center build-out. Construction of the greens, fairways, roughs, golf cart paths, clubhouse and halfway hut will involve disturbance of approximately 140 acres of the Greylock Center property (13% of the land area).

The preliminary golf course routing plan has been developed to: 1) preserve a large portion of the central part of the project site for passive public recreational purposes in conformance with current site use and the results of a town planning forum; 2) utilize five previously-constructed fairways (circa 1972) where those fairways do not interfere with other environmental objectives; 3) avoid encroachment upon wetland resource areas and rare-species habitat; and 4) maintain a readily accessible trail network for general public use.

The course will be designed to embody state-of-art sustainable golf course design and operating practices, and will serve as a model for the burgeoning interest in the construction of environmentally-sensitive golf courses.

Recreational Amenities

The majority of the Greylock Center site will remain public open space, with numerous recreational amenities. Approximately 800 acres, some 75% of the property, will remain untouched by development. Many of the on-site recreational amenities have been designed to link with the Town of Adams and the adjacent Mt. Greylock Reservation, enhancing accessibility and use of the adjoining reservation lands.

Recreational development will include an expanded trail network to accommodate hikers, mountain biking, nordic skiing and horseback riding in addition to ice-skating, swimming, sledding and camping facilities. Interpretive displays will be placed along trails associated with the golf course and at other recreational facilities for educational use.

Wetland Restoration/ Enhancement

The first phase of construction associated with Greylock Center will provide the catalyst for the restoration of wetland resource areas which have been degraded as the result of previous development activities, and which have since been suffering from invasive species colonization. A number of partially-completed reinforced concrete foundation structures are located within the central portion of the Greylock Center site; many are surrounded by common reed (*Phragmites australis*), a tell-tale sign of past disturbance. Consideration is being given to removal of some or all of these structures, and to various invasive species management practices.

Regulatory approval for wetland restoration and enhancement activities on the site will be sought under Limited Project status, and will be conducted under a Notice of Intent and Order of Conditions filed exclusively for this purpose, and not in conjunction with any other site construction activities.

Environmental Center

The Environmental Center is a key element of the proposed Greylock Center program, providing a facility for general ecological studies. The Environmental Center is proposed for early action implementation, upon approval of the Draft EIR. This early action program component will serve as a hallmark of sustainable building design principles to guide the subsequent development of other structures on the Greylock Center property, incorporating local and/or renewable buildings materials, and utilizing energy-efficient equipment to meet heat, light, ventilation and water needs.

The Environmental Center is envisioned to provide residential facilities for students and full-time faculty, as well as day-time, weekend and summer programs for adults and children. The Center will focus its curriculum to serve school-age children on weekdays during the normal academic calendar in conjunction with "Nature's Classroom", a Massachusetts-based children's environmental education provider. The Environmental Center will also offer a variety of weekend and summer environmental education programs geared to draw guests from a broader regional context.

Greylock Village and Residences

The Greylock Center DEIR analyzes potential impacts associated with the construction of a maximum of 300 residential units throughout the Greylock Center site, including both residential units sited within the proposed village complex and the mountain cottages located in a woodland setting.

The proposed village complex will be sited toward the southern end of the Greylock Center property, but north of the proposed hotel/conference center in the original plan. The layout of village may be adjusted under the modified site plan to accommodate the hotel and conference center, as shown in Figure 2. The village has been located in an area with moderate slopes and few wetlands. This location is roughly bisected by the present alignment of West Mountain Road, and is therefore able to take advantage of the existing roadway infrastructure. The core of the village will accommodate several small commercial and public establishments, and a bed & breakfast inn. The village will also be the location of the future 25,000 sf institute headquarters building, which will be constructed to provide flexible meeting and research space, science library and labs, administration and exhibit space for the project's future environmental centers, institutes and foundations. Residential units will be clustered close to their street frontage, with a combination of on-street parking, garages and parking areas sited behind the architectural streetscape. The village will occupy some 25 acres, less than 3% of the Greylock Center property.

Mountain Cottages

An assemblage of up to fifty mountain cottages is proposed to be just north of the present trailhead for the Cheshire Harbor Trail, located westerly of the proposed conference center complex. These structures will offer an opportunity to demonstrate sustainable building practices for single family homes, which are infrequently encountered in the conventional housing market. These cottages may be relocated to the northeastern perimeter of the village complex under the modified site plan.

Gould Road Link

The Greylock Center ENF initially presented the upgrade of Bassett Brook Road as an auxiliary access to the project site. Bassett Brook Road is a long-abandoned gravel roadway which connects the present terminus of West Mountain Road back to West Road. Several comments on the ENF specifically objected to the use of Bassett Brook Road given the environmental impacts associated both with its initial construction and with its ongoing maintenance. Subsequent environmental analyses confirmed these concerns. Consequently, the upgrade of Bassett Brook Road is no longer being considered.

Traffic analyses conducted to support the EIR analysis of the Greylock Center project indicate that traffic generated by the first phase of development can be accommodated by minor improvements to West Mountain Road, while traffic estimates for the full build-out of Greylock Center warrant a second access roadway to distribute site-generated traffic and facilitate circulation within the limits of the Greylock Center property. Construction of a road connecting West Mountain and Gould Roads is therefore proposed to follow the first phase of development, while preceding Phase II.

Several alternative routes were studied, including the initially proposed Bassett Brook Road, acquisition of abutting private property, exclusive use of West Mountain Road, and the construction of a direct link between Gould Road and West Mountain Road. The preferred alignment is shown on Figure 1.

PROJECT IMPACTS AND MITIGATION MEASURES

The following discussion focuses on specific impacts that are anticipated in association with the Greylock Center development, organized by subject matter. Mitigation measures are described under each topic, and are summarized in Table 2 at the end of this section.

Traffic

The traffic study area includes Route 8, Route 116, Fred Mason Road, West Road, Friend Street and Maple Street. Route 8 provides regional access to the Greylock Center property from the north and south. Local access roadways extend from the intersections of Fred Mason Road at Route 8 in the southern portion of the study area to

Friend Street at Route 8 in the Renfrew section of Adams. These local roadways consist of Fred Mason Road, West Road and Friend Street. Other minor collector roads extending east/west from Route 8 to Fred Mason Road, West Road and Friend Street include Reservoir Road, Fisk Street, Maple Street and Valley Street.

Traffic counts were conducted in the late summer and fall of 1997. Traffic counts were performed to obtain existing turning movement volumes at the study intersections. Both weekday and weekend counts were performed during the months of September and October. The directional distribution of traffic to and from the site was based on consideration of the existing traffic volumes on the major approach roads as well as marketing information provided on the proposed development. The distribution assumed is essentially the same as previous Greylock development projects, with approximately 78% of the site traffic oriented to and from the south via Route 8, approximately 15% of the traffic going to and from the north via Route 8, approximately 2% coming into the site via Route 116 to and from the east, and about 5% of the traffic oriented to and from the downtown Adams area.

At full build, based on the Friday peak hour period, the Friend Street approach to Route 8 will drop in level of service (LOS) compared to the No-Build conditions. LOS is an estimate of delay experienced for vehicular movements, with LOS "A" representing free-flowing conditions, and LOS "F" indicating unacceptable delays. LOS for the year 2003 the Build Condition is expected to drop to level "F". The Prospect Street approach to commercial Street (Route 8) will remain at level "E", and the left turns out the Maple Street onto Route 8 will remain at level "D".

Based on the Saturday peak hour period analysis, none of the locations studied showed a significant drop in the level of service for the Full Build condition compared to the No Build condition. The fact that the Route 8 background traffic volumes are typically lower during the Saturday analysis period than the Friday peak hour is the main reason why the levels of service do not change significantly. Table 2 provides a summary of existing and projected traffic volumes for roadways which are expected to be utilized by Greylock Center employees and guests.

Table 2

Peak Hour Traffic Volumes with Greylock Center - Phase I & Phase II Program Development

Location	1997 Existing		2003 No-Build		2003 Build	
	Fri.	Sat.	Fri.	Sat.	Fri.	Sat.
Route 8 (North of Friend Street)	1191	917	1285	1008	1308	1033
Route 8 (South of Fred Mason Road)	1162	839	1340	1075	1461	1204
West Road (North of Gould Road)	230	156	273	215	340	251
West Road (South of West Mountain Road)	195	142	313	334	434	463
Friend Street (South of Route 8)	254	179	289	226	312	251
Maple Street (East of West Road)	105	109	123	133	133	142

The capacity analysis at the intersections studied indicate no major problems accommodating the traffic generated by the development, provided that certain minor roadway improvements are undertaken. These include the following:

- ◆ Independent of this project, the Town of Adams has already requested that improvements to West Road be placed on the Transportation Improvement Plan (TIP) list for implementation in the year 2000. West Road in Adams will be widened to a uniform width of 24 to 26 feet to include an adequate travel lane and some paved shoulder area. The major constriction on West Road is the culvert crossing just south of Fisk Road. This culvert will be replaced to allow for a widening of the current 18 foot roadway at this location.

- ◆ West Mountain Road will be widened near its intersection with West Road to improve its narrow 17 foot width. At the time that the water and sewer utilities for the project are installed, the grade on West Mountain Road will be reduced somewhat in this area.
- ◆ Signalization of Friend Street at the Route 8 intersection may be installed in the year 2000 as part of the West Road reconstruction contract, provided that signal warrants are met at that time. The traffic analyses performed for Greylock Center indicated that traffic signals should be installed at this location independent of the project, due to the delays anticipated for left turns out of Friend Street. The Town of Adams has been aware of these conditions, and has recently reconstructed the intersection to accommodate future signalization.
- ◆ The project includes the construction of a new connecting road between West Mountain Road and Gould Road at the initiation of the Phase II development. This new roadway will provide a connection between the new southern development of Greylock Center and the existing Gould Road, which serves recreational activity in the central and northern area of the site. This connection will help distribute the future build-out traffic and alleviate the traffic increases on West Mountain Road.

A traffic demand management (TDM) program will be implemented upon completion of Phase I of the Greylock Center build-out. Actions include such items as providing off-site satellite parking, special employee parking, shuttle service between the site and downtown Adams, and park/ride facilities downtown or at other Adams locations which can provide off-site parking in conjunction with BRTA bus service and/or shuttle service to/from the Greylock Center site. These measures may reduce traffic below the 2003 projections, however the extent to which traffic may be reduced is partially dependent upon the voluntary participation of guests of Greylock Center facilities, and therefore has not been estimated.

Based on the traffic analysis discussed previously, the traffic increase for the Phase I development can be accommodated on the existing roadways assuming certain modest improvements as discussed previously are implemented. The total build-out of the project (Phase I plus Phase II development) based on a five-year traffic projection will generate traffic volumes which necessitate some improvements to existing local streets and intersections in the project area. Recommendations have been made as part of the Draft Environmental Impact Report for physical improvements to roadways and intersections, actions to better manage traffic demand to and from the site, and future access improvements regarding new roadway construction which further reduce traffic impacts. ***Overall, with the mitigation measures recommended, the site development traffic can be accommodated safely and efficiently.***

Wetlands and Drainage

Wetland resources were delineated by Earth Tech scientists on various occasions between the autumn of 1996 and the spring of 1998, in order to collect detailed field data across the extents of the 1,063 acre site. Resource area boundaries have not yet been confirmed with the Adams Conservation Commission, however wetland limits as identified by Earth Tech have been utilized as preliminary guidance for site planning efforts. The Department of Environmental Management will seek confirmation of resource area boundaries as the general location of major components of the site plan are established.

The proposed Greylock Center site plan has been developed to avoid wetland impacts to the maximum extent possible. As illustrated by the site plan, there are no direct impacts associated with the development footprint of buildings or the golf course fairways. The only anticipated impacts to resource areas would result from crossings associated with development of various trail networks, including hiking, cross-country skiing, equestrian, and golf cart trails, and the alteration of Riverfront Area resulting from the proposed roadway crossing over Pecks Brook. Trail networks have been designed to converge at stream and wetland crossings to minimize the total number of crossings required. These proposed crossings will be spanned by wooden bridge structures, such that the only direct and permanent impacts are limited to the footprint of individual posts. In some instances, existing culverts will be removed, and a new crossing will be spanned by a bridge structure, such that the new crossing represents an improvement over existing conditions. ***In total, it is expected that there will be less than 3,500 square feet of temporary wetland impacts associated with construction of trails and fewer than 500 square feet of permanent impacts by new stream crossing structures.***

A key component of the overall planning process for the Greylock Center property has been to accommodate stormwater management measures both during project construction and operation. Accordingly, stormwater management facilities have been incorporated into preliminary design for each of the proposed project elements. All aspects of the proposed development will comply with the MA Department of Environmental Protection (DEP) Stormwater Management Policy (November, 1996), and standards set forth in Stormwater Management, Volume One: Stormwater Policy Handbook (DEP, March 1997). Site planning and nonstructural approaches relative to comprehensive stormwater management, source controls and pollution prevention have been a focus of the conceptual design effort. Structural Best Management Practices (BMP) as described in Stormwater Management, Volume Two: Stormwater Technical Handbook (DEP, March, 1997) will be designed in further detail during the design development process.

Since site development will result in the alteration of greater than five (5) acres of land, a National Pollutant Discharge Elimination System (NPDES) permit for construction activities will be required from the U.S. Environmental Protection Agency (EPA). As required, a Stormwater Pollution Prevention Plan addressing golf course construction procedures and sequencing, construction-related drainage, and soil erosion and sediment controls will be prepared as part of the Notice of Intent and will be filed with EPA.

State-listed Species and Habitats

The Greylock Center property is in an area of distinctive physiography. The geology and diverse land use history of the property have resulted in a mosaic of wetland and upland habitats, including community types distinctive to the area or otherwise regionally significant. Due to this habitat diversity and uniqueness, the Greylock Center property supports a number of plant and animal species listed under the MA Endangered Species Act (MESA, MGL Chapter 131A) and associated regulations (321 CMR 10.00 et.seq.), some of whose distribution in Massachusetts is restricted to the northern Berkshires. As specifically requested by the Massachusetts Natural Heritage and Endangered Species Program (MA NHESP) in their comment letter relative to the Environmental Notification Form, the locations/habitats of these species on site is not shown on any figures in the DEIR.

Based on the above-referenced MA NHESP comment letter, fifteen (15) special status species occur onsite. In contrast, based on a review of Endangered and Threatened Wildlife and Plants (U.S. Department of the Interior, Fish and Wildlife Service; 50 CFR 17.11 and 17.12; October 31, 1996), no plant or wildlife species listed as endangered or threatened at the Federal level is known to occur onsite.

The general approach of the Greylock Center site plan with regard to rare species and communities has been one of avoidance, and where feasible and appropriate, protection and enhancement. During the design effort, information regarding rare species was reviewed, including the extensive ecological surveys documented in Natural Resources at Greylock Center [Center for Ecological Technology (CET), 1996]. Consequently, facility design activities have resulted in a project which, through a policy of maximal avoidance, will not directly impact rare species or community types.

No adverse impacts to state-listed species are expected due to construction and operation of the proposed Greylock Center. This primarily is due to the remote location of many of these species and their associated habitats relative to proposed project features. It also is due to facility construction and operation mitigation measures such as soil erosion and sediment controls, stormwater management, and implementation of an integrated pest management program associated with the proposed golf course.

A comprehensive management plan will be developed for the Greylock Center habitats. The plan will describe commitments for management responsibility, and will cover public recreation opportunities, facilities and staffing needs, golf course management, and also include recommendations for forest and field stewardship and ecological monitoring programs. The objectives of a management planning process include:

- ◆ Provision of management guidelines and identification of responsibilities for managing the site to sustain biodiversity and other aspects of ecological health, and where possible, enhance or restore ecosystems.
- ◆ Development of a monitoring program, associated with environmental education opportunities, to ensure long-term stewardship of natural resources.
- ◆ Identification of sustainable approaches to development, and facility and golf course management, including a long-term commitment to cutting edge environmental technology.

The habitat stewardship plan will include the establishment of Land Stewardship Zoning designations for certain areas of the property, and management recommendations specific to these designations.

Land Stewardship Zoning

A Land Stewardship Zoning system has been developed by all the land managing agencies within the Executive Office of Environmental Affairs, i.e. the Department of Food & Agriculture; the Department of Fisheries & Wildlife; the Metropolitan District Commission; and the Department of Environmental Management. The system can be easily adapted for the Greylock Center facilities and surrounding landscape. The zoning classifications enable regulation of activities within specific areas of a property so that sensitive and significant resources are protected. In addition, it is possible to guide future development and improvements to sites that can tolerate intensive use. There are three Land Stewardship Zoning classifications. These include:

Environmental Protection Zone for highly sensitive areas requiring a high degree of protection, such as rare species habitats or archaeological sites.

Conservation Zone for moderately sensitive areas, such as managed woodlands, water resources, native wildlife habitat and agricultural resources; and

Intensive Use Zone for areas where resources can accommodate high levels of visitor use, and associated structures or maintenance facilities.

The designation of these zones will be articulated through the Master Lease between DEM and GMA.

Management Recommendations

- ◆ Management practices geared toward discrete habitat types, such as biannual late-fall mowing for potential grassland bird habitat surrounding the golf course and silvicultural practices to maintain rich mesic forest type.
- ◆ Possibilities for habitat enhancement, e.g. grassland bird habitat and wildflower plantings to improve lepidopteran habitat.
- ◆ Wildlife corridors, habitat continuity considerations, cover type and management of successional status diversity.
- ◆ Organization of monitoring programs for rare species, unique communities, invasive species (especially *Phragmites* and purple loosestrife), water quality and quantity for streams, ponds and groundwater.

Golf Course

The Greylock Center golf course has been developed as an integral component of the overall development site plan, and has sought to complement the overall goals of the Greylock Center program pertaining to resource protection and enhancement of recreational opportunities provided by the site. The routing plan has been refined to provide ample access to the central glen portion of the Greylock Center property favored by local residents for passive recreation, and to ensure that extensive buffers are maintained between sensitive resources (*i.e.*, wetlands and state-listed species habitats) and golf fairway development. Opportunities to integrate Greylock Center educational programs with the golf course management program are also being planned, as the maintenance of the golf course provides a means to study distinct ecosystems (*e.g.*, arrested old field habitat created through annual or biennial mowing of roughs).

For the proposed Greylock Center golf course, the irrigation water demand is anticipated to be approximately 10-12 million gallons per year, averaged over a sixth month period, with the most usage anticipated to occur during the months of June through August. The irrigation system to be implemented will allow the application of water *only when necessary* to compensate for precipitation deficits, and the recycling of a portion of surface water runoff from developed areas to supplement the irrigation water supply.

Extensive use of surface water supplies raises serious concerns regarding potential impacts to stream flow, wetland functions and wildlife habitat, particularly in light of the presence of certain water-dependent state-listed species in several locations throughout the Greylock Center property. For these reasons, the project will not seek to meet irrigation demand through the use of surface waters. The preferred irrigation supply system will rely upon a system of multiple wells. These wells may be utilized to supply artificial water hazards/irrigation ponds which mimic the appearance of surface water resources, however these irrigation supply storage features will not divert natural surface waters.

The conceptual design for the irrigation water supply consists of a series of six lined surface storage ponds. These ponds will be filled during spring months by snowmelt, rainfall and stormwater runoff, and will be supplemented by on-site wells as required. At the onset of the irrigation season, the ponds will be full and approximately one half of the pond volume will be available for irrigation. During the dry summer months, water will be drawn from the ponds periodically and pumped into the irrigation system.

DEM will undertake exploration for development of on-site wells during the summer of 1998. The groundwater exploration effort will include a prolonged pump test and biological monitoring program. The Natural Heritage and Endangered Species Program (NHESP) will be consulted during this process, such that the pump testing program can be utilized to gauge potential impacts to state-listed species and habitats resulting from effects to the water table in the vicinity of well locations and to stream flow downgradient of proposed wells.

An Integrated Pest Management Plan (IPM) will be developed by the recently selected golf course architect. Golf course conditions during operation will be closely monitored, with specialized treatment being implemented in accordance with the IPM program, as required. These treatments will be based upon a set of defined action thresholds. If determined to constitute the best available control, selected treatments will entail the implementation of operational actions before chemical controls.

To assist the golf course superintendent in the implementation of IPM practices and to provide for the early detection of unanticipated adverse impacts to water quality, a 3-year surface water quality monitoring program will be implemented. Initially, surface water samples will be collected prior to construction at strategic locations throughout the course, as well as at downstream locations. These data will provide the background information against which subsequently collected data will be compared.

During golf course operation, water quality samples will be collected in the spring, summer and fall. These samples will be analyzed for nutrients, and pesticides/herbicides specific to management of the Greylock Center golf course. Based on the data collected, modifications to fertilization and pesticide/herbicide usage will be implemented.

Water quality monitoring efforts will be coordinated with the Greylock Environmental Center. In addition, use of the Greylock Center golf course as a 'classroom' for Williams College or the University of Massachusetts turfgrass program will be pursued as the golf course design and Environmental Center programming are advanced.

Historical and Archaeological Resources

Following review of inventory forms and the DEIR for the 1987 Heritage Greylock development proposal, the Massachusetts Historical Commission (MHC) determined that the project area contained no significant archaeological or historic properties. The

MHC concluded that no further review of the proposed project was required in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800) and Chapter 254, M.G.L., Chapter 9, Sections 26-27C (950 CMR 71.00). In light of the significant departures between the Heritage Greylock proposal and the Greylock Center project, MHC was contacted to ensure that their position remained valid for the present circumstances. In response, MHC noted that they did not comment upon the FEIR for Heritage Greylock, nor upon the Greylock Center ENF, and have no further interest in future activities on the project site.

Water Supply and Sewage Disposal

Water Supply

No public water supply presently services the Greylock Center property. Rather, residences along West Mountain Road receive potable water from private wells, as does the Gould Farm. Proximate to the site, an eight (8) inch water line extending from the north along West Road terminates approximately 150 feet north of the West Road/West Mountain Road intersection (Map of Adams Fire District; Revised January, 1995). An eight (8) inch water line also terminates in Fisk Road at its junction with West Road, approximately 450 feet south of the West Road/West Mountain Road intersection.

The main source of the water supply for the Town of Adams is located adjacent to the Hoosic River and is known as the Cheshire Harbor wellfield. This wellfield is owned and operated by the Town of Adams, although it is located in the Town of Cheshire. The town has an average water demand of approximately 1.5 million gallons per day (mgd). This demand rate is approximately 60 percent of the supply's maximum safe yield of 2.5 mgd. According to the Town of Adams, estimates of future water demand for Adams are 2.16 mgd in the year 2000 and 2.43 mgd in the year 2010. The estimate of municipal water use for Greylock Center at full build-out is approximately 165,000 gallons per day (gpd). A new eight (8) inch water main located along West Road would serve Greylock Center facilities which require potable water. This water line is expected to have a capacity of approximately 0.7 million gallons per day (MGD). This flow rate exceeds the flow requirement for the full build out of Greylock Center.

Sewage System

This area does not have any sewage pipes on site connected to the municipal wastewater treatment system. All previous development on site was serviced by septic systems.

It is estimated that the proposed Greylock Center development will generate approximately 150,000 gallons per day (gpd) of sewage at maximum occupancy during the peak summer season (June, July and August). The expected peak sewage flow is approximately 450 gallons per minute (gpm). The peak flow is estimated at 4.5 times the average flow.

The majority of project-generated sewage will be collected and disposed of through the Adams municipal wastewater treatment plant (WWTP). The design capacity of the existing treatment works is approximately 10 mgd, and the WWTP is currently treating about 2.5 mgd, which is operating at only 25 percent of its capacity.

It is assumed that the growth projections for the sewage district will parallel the water usage projections for the town of Adams. Therefore, the conservative estimates of the sewage flow for Adams are 3.6 mgd in the year 2000 and 4.1 mgd in the year 2010. Therefore, the Adams WWTP has sufficient capacity to treat sewage generated at Greylock Center.

The following water conservation techniques will be evaluated and used throughout the project:

- ◆ Flow restrictors for plumbing fixtures;
- ◆ Faucets with water conserving aerators;
- ◆ Water conserving low-flow toilets; and
- ◆ Energy efficient appliances to heat water for showers, dishwashing, laundry and other miscellaneous cleaning.

The Greylock Center project will seek to incorporate sustainability and educational measures into certain aspects of the water supply and sewage disposal systems. The Environmental Center in particular will be used as a model for other facilities; proposed for construction as an early action, the use of green technologies for this complex will be operational while remaining facilities may still be under design. The successful implementation of water-saving features and potential use of solar aquatic sewage disposal will serve to garner confidence in such alternative technologies for use in other Greylock Center facilities.

Agricultural Land

The Secretary's Certificate on the ENF states that compliance with Executive Order 193 must be shown for the project, because of the use of state funding. Executive Order 193 was signed by Governor Edward J. King in 1981 to encourage the preservation of state-owned agricultural land. The Order, as it relates to the proposed Greylock Center project, directs that State Agency actions shall encourage the protection of state-owned agricultural land by mitigating against the conversion of such land to non-agricultural uses, with an emphasis on irreversible conversion.

The Order defines agricultural land as land classified as Prime, Unique, or of State and Local Importance by the U.S. Department of Agriculture (USDA) Soil Conservation Service, now the Natural Resources Conservation Service (NRCS), as well as land in active agricultural use.

The site does not currently support any agricultural uses. The most recent farming activity involved a one-year permit issued by DEM allowing the cultivation of approximately 17 acres of corn in the southern portion of the site in 1994. The soils in the vicinity of this former cornfield are not defined as Prime, Unique, or of State and Local Importance by the NRCS.

The only areas containing prime agricultural soils had previously been developed as a golf course in the 1970s. The majority of this portion of the previous golf course will not be redeveloped, but will allow passive recreational uses. Proposed fairways associated with Holes #7, #11, and #12 will be constructed on soils mapped as Amenia silt loam and Pittsfield loam, however construction of these fairways does not constitute an irreversible conversion of farmland, as the soils still have the potential to support agriculture if use of the golf course should be discontinued.

Measures to mitigate the proposed use of agricultural land for non-agricultural purposes are being developed in response to recommendations provided by CET and the Massachusetts Department of Food and Agriculture (DFA). The mitigation measures under consideration include use and sale of local farm products, information on area farms, and special education programs which would involve on-site agricultural activities. Operational details of the proposed activities will be developed as the Greylock Center design and programming progresses.

Executive Order 385: Planning for Growth

The Greylock Center project provides a pertinent case study to evaluate the effectiveness of EO 385 in attaining its dual objectives. Greylock Center is referred to in DEM's EO 385 report as an example of the agency's efforts to promote economic development, while maintaining high standards of design to protect natural and cultural resources. Moreover, Greylock Center directly embodies local growth planning policies. Local support for the Greylock Center project is extraordinary, as reflected by recent revisions to the Town of Adams zoning bylaw, which was revised in May of 1997 following a unanimous town meeting vote to establish guidelines for the development of a "Planned Unit Resort Development" (PURD). Finally, as the product of a public-private partnership, Greylock Center stands as a model of private investment stimulating economic growth while respecting the public interest in preservation and enhancement of natural resources.

Planning and design of the Greylock Center project has been thoughtfully guided with respect to existing natural resources occurring within the property limits. Earlier development proposals at this location have failed, in large part due to the lack of recognition afforded environmental constraints of the site. Preliminary siting of development features for the Greylock Center program relied heavily upon prior resource inventory efforts, allowing designers the ability to locate high-intensity uses

(e.g., hotel/conference center and village) as distant from sensitive resources as possible. Refinement of the preliminary site plan has been – and continues to be – an ongoing effort as details of the design are more fully articulated.

Greylock Center seeks to be a model of sustainable development in the New England region. The project is being guided by numerous recommendations developed by the Center for Ecological Technology (CET) in a report entitled “Sustainable Development at Greylock Center”, which establishes a decision-making process for evaluating aspects of the site planning process and for the selection of various materials and equipment to be used in construction of the project. Project designers will also look toward several sustainable development case studies, including residential communities and examples of green technology utilized in building materials and equipment.

Mitigation Summary

Proposed mitigation measures are presented on Table 3.

Table 3 – Mitigation Summary

Topic	Proposed Mitigation	Responsible Party	Implementation Schedule
Traffic	Gould Road Link	DEM/Adams	Preceding Phase II
	West Road Improvements	DEM/Adams	Phase I (schematic design) Construction to Precede Phase II
	Satellite Parking	GMA	Phase II
	Shuttle Service	GMA for hotel/village link to Adams center and employee ride-sharing GMA/ DEM for events parking	Phase II
Wetlands and Drainage	Restoration of presently degraded wetlands	DEM	Phase I
	Invasive species management	DEM/GMA	Phase I and ongoing
	Compensation for wetland crossings	DEM	Phase I (mitigation measures to precede construction of crossings)
	Erosion & sedimentation control	DEM/GMA	Throughout construction period
Stormwater Management	Stormwater BMPs in association with Gould Road Link	DEM/Adams	Preceding Phase II; maintenance ongoing
	Detention/Retention basins, water quality measures	DEM/GMA	Concurrent with facilities construction, maintenance ongoing

Topic	Proposed Mitigation	Responsible Party	Implementation Schedule
Wildlife/ State-Listed Species	Pump tests for proposed irrigation supply wells	DEM	Summer 1998
	Management plan & monitoring program	DEM/GMA	Plan to be included in FEIR; monitoring activities will be integrated into Greylock Center education programming, and will be ongoing
Golf Course	Development of Integrated Pest Management plan (IPM)	DEM/GMA	Site-specific IPM to be included in FEIR
	Implementation of IPM/ water quality monitoring	GMA	Post-development
Historical and Archaeological	None required		
Water & Sewer	Education program for employees and guests	GMA	Post-development
	Alternative Sewage Disposal/ Treatment	GMA (residential/ commercial) DEM (recreational)	Phases I & II Phase I
	Low-flow equipment	GMA	Phase I & II
Agricultural Land	Agri-tourism programming	DEM and GMA	Post-development
	Use of local agricultural products	GMA	Post-development

